

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P776750

Luminaire Tested: HCDJBS4050CSD-HCD81TRH-5000lm-2700K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776750
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B043-HCD81TRH)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD81TRH-5000lm-2700K
Description: 8 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

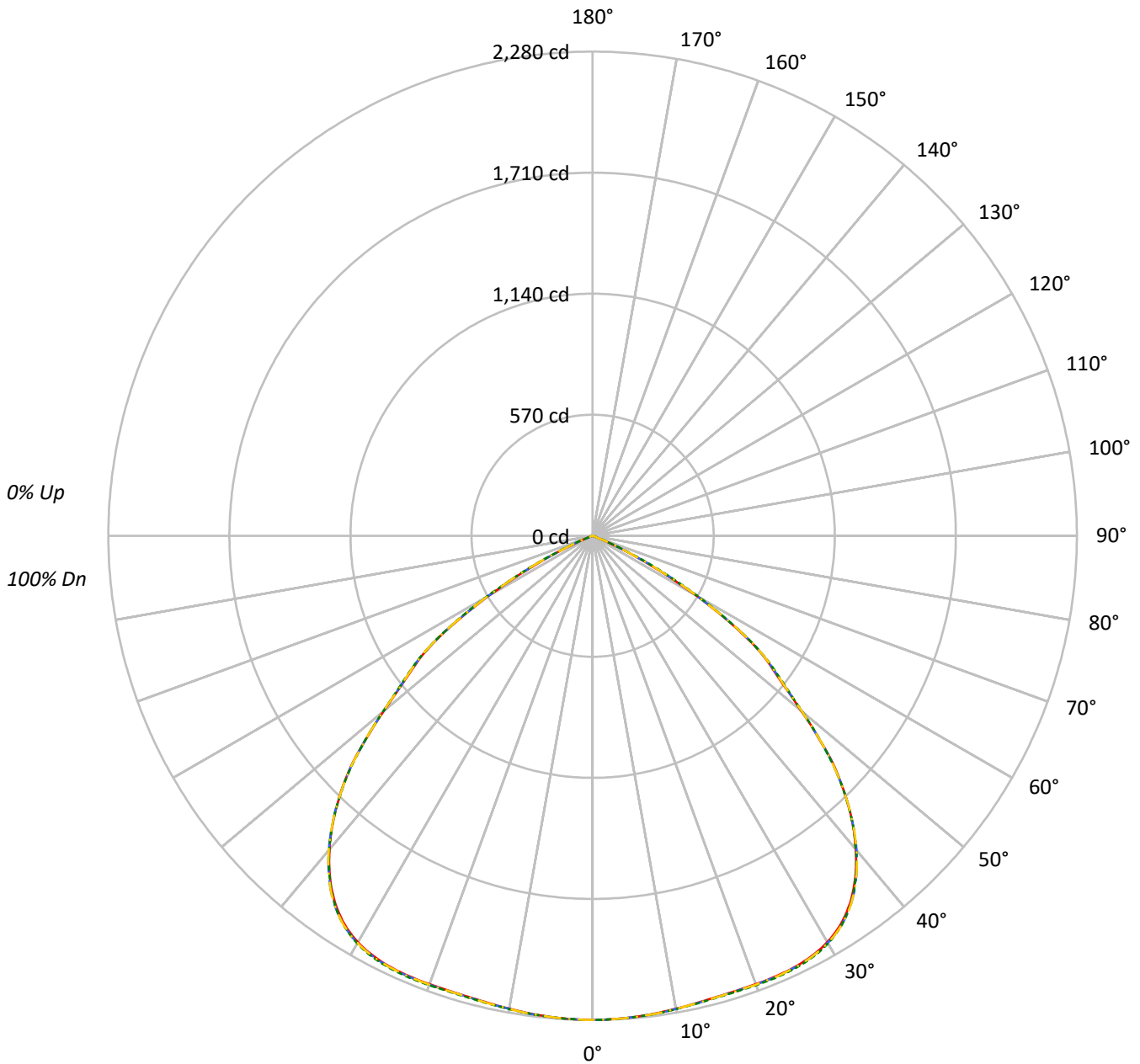
Lumens per Lamp: N/A
Luminaire Lumens: 5536.9 lumens
Efficiency: N/A
Efficacy: 115.4 lumens/watt
Spacing Criteria (0/90/45): 1.42 / 1.42 / 1.43
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100			100
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89			89
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78			78
3	96	87	80	75	93	85	79	74	82	77	73	80	75	71	77	74	70	68			68
4	88	78	70	65	86	77	70	64	74	68	63	72	67	63	70	66	62	60			60
5	82	70	62	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53			53
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	47			47
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41			41
8	65	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37			37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33			33
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	42	36	32	30			30

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	69600	69600	69600	69600
5°	69697	69725	69697	69725
10°	70106	70165	70106	70165
15°	71088	71189	71088	71189
20°	72998	73163	72998	73163
25°	75549	75764	75549	75764
30°	77906	78132	77906	78132
35°	78730	78898	78730	78898
40°	76811	76847	76811	76847
45°	71642	71543	71642	71543
50°	60796	61228	60796	61228
55°	51972	52264	51972	52264
60°	34182	35519	34182	35519
65°	12050	14520	12050	14520
70°	205	1098	205	1098
75°	59	59	59	59
80°	0	88	0	88
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 71642 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	216.8	3.9
10°-20°	638.3	11.5
20°-30°	1036.9	18.7
30°-40°	1316.6	23.8
40°-50°	1262.7	22.8
50°-60°	849.8	15.3
60°-70°	215.0	3.9
70°-80°	0.9	0.0
80°-90°	0.0	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1892.0	34.2
0°-40°	3208.5	57.9
0°-60°	5321.0	96.1
0°-90°	5536.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5536.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2280	2280	2280	2280	2280	
5°	2274	2275	2274	2275	2274	217
15°	2249	2252	2249	2252	2249	638
25°	2243	2249	2243	2249	2243	1035
35°	2112	2117	2112	2117	2112	1314
45°	1659	1657	1659	1657	1659	1263
55°	976	982	976	982	976	844
65°	167	201	167	201	167	200
75°	0	0	0	0	0	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2279.7	2279.7	2279.7	2279.7	2279.7	2279.7	2279.7	2279.7	2279.7	2279.7	2279.7
0.5°	2279.2	2279.2	2279.7	2280.1	2279.7	2280.1	2279.7	2279.2	2279.2	2279.2	2279.7
1°	2279.2	2279.2	2279.7	2280.1	2279.2	2280.1	2279.7	2279.2	2279.2	2279.2	2279.7
1.5°	2278.8	2278.8	2279.2	2279.7	2279.2	2279.7	2279.2	2278.8	2278.8	2278.8	2279.2
2°	2278.3	2278.3	2279.2	2279.2	2278.8	2279.2	2279.2	2278.3	2278.3	2278.3	2279.2
2.5°	2277.8	2278.3	2278.8	2279.2	2278.3	2279.2	2278.8	2278.3	2277.8	2278.3	2278.8
3°	2277.4	2277.4	2278.3	2278.3	2277.8	2278.3	2278.3	2277.4	2277.4	2277.4	2278.3
3.5°	2276.5	2276.9	2277.4	2277.8	2277.4	2277.8	2277.4	2276.9	2276.5	2276.9	2277.4
4°	2276.0	2276.0	2276.5	2277.4	2276.5	2277.4	2276.5	2276.0	2276.0	2276.0	2276.5
4.5°	2275.1	2275.6	2276.0	2276.5	2276.0	2276.5	2276.0	2275.6	2275.1	2275.6	2276.0
5°	2274.2	2274.6	2275.1	2275.6	2275.1	2275.6	2275.1	2274.6	2274.2	2274.6	2275.1
5.5°	2273.3	2273.3	2274.2	2274.6	2274.2	2274.6	2274.2	2273.3	2273.3	2273.3	2274.2
6°	2271.9	2272.4	2272.8	2273.7	2273.3	2273.7	2272.8	2272.4	2271.9	2272.4	2272.8
6.5°	2271.0	2271.5	2271.9	2272.8	2271.9	2272.8	2271.9	2271.5	2271.0	2271.5	2271.9
7°	2269.6	2270.1	2271.0	2271.5	2271.0	2271.5	2271.0	2270.1	2269.6	2270.1	2271.0
7.5°	2268.3	2268.7	2269.6	2270.1	2269.6	2270.1	2269.6	2268.7	2268.3	2268.7	2269.6
8°	2267.4	2267.4	2268.3	2269.2	2268.7	2269.2	2268.3	2267.4	2267.4	2267.4	2268.3
8.5°	2266.0	2266.0	2266.9	2267.4	2267.4	2267.4	2266.9	2266.0	2266.0	2266.0	2266.9
9°	2264.2	2264.6	2265.5	2266.4	2266.0	2266.4	2265.5	2264.6	2264.2	2264.6	2265.5
9.5°	2262.8	2263.3	2264.2	2265.1	2264.6	2265.1	2264.2	2263.3	2262.8	2263.3	2264.2
10°	2261.4	2261.9	2262.8	2263.7	2263.3	2263.7	2262.8	2261.9	2261.4	2261.9	2262.8
10.5°	2260.1	2260.5	2261.0	2262.3	2261.9	2262.3	2261.0	2260.5	2260.1	2260.5	2261.0
11°	2258.7	2258.7	2259.6	2261.0	2260.5	2261.0	2259.6	2258.7	2258.7	2258.7	2259.6
11.5°	2257.3	2257.3	2258.2	2259.6	2259.2	2259.6	2258.2	2257.3	2257.3	2257.3	2258.2
12°	2256.0	2256.0	2256.9	2258.2	2258.2	2258.2	2256.9	2256.0	2256.0	2256.0	2256.9
12.5°	2254.6	2254.6	2256.0	2256.9	2256.9	2256.9	2256.0	2254.6	2254.6	2254.6	2256.0
13°	2253.2	2253.7	2254.6	2255.5	2256.0	2255.5	2254.6	2253.7	2253.2	2253.7	2254.6
13.5°	2251.9	2252.3	2253.7	2254.6	2254.6	2254.6	2253.7	2252.3	2251.9	2252.3	2253.7
14°	2250.9	2251.4	2252.3	2253.7	2253.7	2253.7	2252.3	2251.4	2250.9	2251.4	2252.3
14.5°	2250.0	2250.5	2251.4	2252.8	2253.2	2252.8	2251.4	2250.5	2250.0	2250.5	2251.4
15°	2249.1	2249.6	2250.5	2252.3	2252.3	2252.3	2250.5	2249.6	2249.1	2249.6	2250.5
15.5°	2248.2	2248.7	2250.0	2251.4	2251.9	2251.4	2250.0	2248.7	2248.2	2248.7	2250.0
16°	2247.8	2248.2	2249.1	2250.9	2251.4	2250.9	2249.1	2248.2	2247.8	2248.2	2249.1
16.5°	2247.3	2247.8	2248.7	2250.5	2250.9	2250.5	2248.7	2247.8	2247.3	2247.8	2248.7
17°	2246.8	2247.3	2248.7	2250.5	2250.9	2250.5	2248.7	2247.3	2246.8	2247.3	2248.7
17.5°	2246.8	2247.3	2248.2	2250.5	2250.9	2250.5	2248.2	2247.3	2246.8	2247.3	2248.2
18°	2246.4	2246.8	2248.2	2250.5	2250.9	2250.5	2248.2	2246.8	2246.4	2246.8	2248.2
18.5°	2246.4	2246.8	2248.2	2250.5	2250.9	2250.5	2248.2	2246.8	2246.4	2246.8	2248.2
19°	2246.8	2246.8	2248.2	2250.9	2251.4	2250.9	2248.2	2246.8	2246.8	2246.8	2248.2
19.5°	2246.8	2247.3	2248.7	2250.9	2251.9	2250.9	2248.7	2247.3	2246.8	2247.3	2248.7
20°	2246.8	2247.3	2248.7	2251.4	2251.9	2251.4	2248.7	2247.3	2246.8	2247.3	2248.7
20.5°	2247.3	2247.3	2249.1	2251.4	2252.3	2251.4	2249.1	2247.3	2247.3	2247.3	2249.1
21°	2247.3	2247.8	2249.1	2251.9	2252.3	2251.9	2249.1	2247.8	2247.3	2247.8	2249.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2246.8	2247.3	2249.1	2251.9	2252.8	2251.9	2249.1	2247.3	2246.8	2247.3	2249.1
23°	2246.4	2246.8	2248.7	2251.4	2252.3	2251.4	2248.7	2246.8	2246.4	2246.8	2248.7
23.5°	2245.9	2246.4	2248.2	2250.9	2251.9	2250.9	2248.2	2246.4	2245.9	2246.4	2248.2
24°	2245.5	2245.5	2247.3	2250.5	2251.4	2250.5	2247.3	2245.5	2245.5	2245.5	2247.3
24.5°	2244.1	2244.6	2246.4	2249.6	2250.5	2249.6	2246.4	2244.6	2244.1	2244.6	2246.4
25°	2242.7	2243.2	2245.5	2248.7	2249.1	2248.7	2245.5	2243.2	2242.7	2243.2	2245.5
25.5°	2241.4	2241.8	2244.1	2247.3	2247.8	2247.3	2244.1	2241.8	2241.4	2241.8	2244.1
26°	2239.6	2240.0	2242.3	2245.5	2246.4	2245.5	2242.3	2240.0	2239.6	2240.0	2242.3
26.5°	2237.3	2237.7	2240.5	2243.7	2244.1	2243.7	2240.5	2237.7	2237.3	2237.7	2240.5
27°	2235.0	2235.4	2237.7	2240.9	2241.4	2240.9	2237.7	2235.4	2235.0	2235.4	2237.7
27.5°	2231.8	2232.7	2235.0	2238.2	2238.6	2238.2	2235.0	2232.7	2231.8	2232.7	2235.0
28°	2228.6	2229.1	2231.8	2235.0	2235.4	2235.0	2231.8	2229.1	2228.6	2229.1	2231.8
28.5°	2225.0	2225.4	2228.2	2231.3	2231.3	2231.3	2228.2	2225.4	2225.0	2225.4	2228.2
29°	2220.4	2221.3	2224.1	2226.8	2227.2	2226.8	2224.1	2221.3	2220.4	2221.3	2224.1
29.5°	2215.4	2216.3	2219.5	2222.2	2222.2	2222.2	2219.5	2216.3	2215.4	2216.3	2219.5
30°	2209.9	2210.8	2214.0	2216.8	2216.3	2216.8	2214.0	2210.8	2209.9	2210.8	2214.0
30.5°	2204.0	2204.9	2208.1	2210.8	2210.4	2210.8	2208.1	2204.9	2204.0	2204.9	2208.1
31°	2197.2	2198.1	2201.7	2204.0	2203.1	2204.0	2201.7	2198.1	2197.2	2198.1	2201.7
31.5°	2189.4	2190.8	2194.4	2196.2	2195.3	2196.2	2194.4	2190.8	2189.4	2190.8	2194.4
32°	2180.7	2182.6	2186.2	2188.0	2187.1	2188.0	2186.2	2182.6	2180.7	2182.6	2186.2
32.5°	2171.6	2173.5	2177.1	2178.5	2177.6	2178.5	2177.1	2173.5	2171.6	2173.5	2177.1
33°	2161.6	2163.4	2167.5	2168.4	2167.1	2168.4	2167.5	2163.4	2161.6	2163.4	2167.5
33.5°	2150.2	2152.5	2156.6	2157.5	2156.1	2157.5	2156.6	2152.5	2150.2	2152.5	2156.6
34°	2138.8	2141.1	2145.2	2145.6	2143.8	2145.6	2145.2	2141.1	2138.8	2141.1	2145.2
34.5°	2125.6	2128.3	2132.4	2132.4	2130.6	2132.4	2132.4	2128.3	2125.6	2128.3	2132.4
35°	2112.4	2114.6	2119.2	2118.8	2116.9	2118.8	2119.2	2114.6	2112.4	2114.6	2119.2
35.5°	2097.8	2100.1	2104.6	2104.2	2102.3	2104.2	2104.6	2100.1	2097.8	2100.1	2104.6
36°	2082.3	2085.0	2089.6	2088.7	2086.4	2088.7	2089.6	2085.0	2082.3	2085.0	2089.6
36.5°	2066.3	2068.6	2073.2	2072.3	2069.5	2072.3	2073.2	2068.6	2066.3	2068.6	2073.2
37°	2048.6	2051.3	2055.4	2054.9	2052.2	2054.9	2055.4	2051.3	2048.6	2051.3	2055.4
37.5°	2030.8	2033.1	2037.6	2036.2	2033.5	2036.2	2037.6	2033.1	2030.8	2033.1	2037.6
38°	2011.6	2014.4	2018.5	2017.1	2013.9	2017.1	2018.5	2014.4	2011.6	2014.4	2018.5
38.5°	1991.6	1994.3	1998.4	1996.6	1993.9	1996.6	1998.4	1994.3	1991.6	1994.3	1998.4
39°	1971.5	1973.8	1977.4	1976.1	1972.9	1976.1	1977.4	1973.8	1971.5	1973.8	1977.4
39.5°	1950.1	1951.9	1955.6	1954.2	1951.0	1954.2	1955.6	1951.9	1950.1	1951.9	1955.6
40°	1927.3	1929.1	1932.8	1931.4	1928.2	1931.4	1932.8	1929.1	1927.3	1929.1	1932.8
40.5°	1904.5	1905.9	1909.1	1907.7	1904.5	1907.7	1909.1	1905.9	1904.5	1905.9	1909.1
41°	1880.3	1881.7	1884.4	1883.5	1880.3	1883.5	1884.4	1881.7	1880.3	1881.7	1884.4
41.5°	1855.7	1856.6	1859.4	1857.6	1855.3	1857.6	1859.4	1856.6	1855.7	1856.6	1859.4
42°	1830.2	1831.1	1832.9	1832.0	1829.7	1832.0	1832.9	1831.1	1830.2	1831.1	1832.9
42.5°	1804.2	1804.2	1806.0	1805.1	1802.9	1805.1	1806.0	1804.2	1804.2	1804.2	1806.0
43°	1776.9	1776.9	1778.2	1777.3	1775.0	1777.3	1778.2	1776.9	1776.9	1776.9	1778.2
43.5°	1748.6	1748.6	1749.1	1748.2	1746.8	1748.2	1749.1	1748.6	1748.6	1748.6	1749.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1659.3	1657.9	1657.9	1657.4	1657.0	1657.4	1657.9	1657.9	1659.3	1657.9	1657.9
45.5°	1627.4	1626.0	1625.5	1625.1	1624.6	1625.1	1625.5	1626.0	1627.4	1626.0	1625.5
46°	1594.5	1592.7	1592.3	1592.3	1591.8	1592.3	1592.3	1592.7	1594.5	1592.7	1592.3
46.5°	1560.3	1558.5	1558.1	1557.6	1557.2	1557.6	1558.1	1558.5	1560.3	1558.5	1558.1
47°	1523.9	1522.1	1520.7	1519.8	1518.9	1519.8	1520.7	1522.1	1523.9	1522.1	1520.7
47.5°	1484.2	1482.4	1480.6	1481.0	1480.6	1481.0	1480.6	1482.4	1484.2	1482.4	1480.6
48°	1442.3	1441.8	1442.7	1443.2	1443.7	1443.2	1442.7	1441.8	1442.3	1441.8	1442.7
48.5°	1402.2	1402.2	1404.0	1404.4	1404.4	1404.4	1404.0	1402.2	1402.2	1402.2	1404.0
49°	1363.4	1363.0	1364.3	1364.8	1365.2	1364.8	1364.3	1363.0	1363.4	1363.0	1364.3
49.5°	1321.5	1321.9	1324.7	1326.5	1327.0	1326.5	1324.7	1321.9	1321.5	1321.9	1324.7
50°	1280.0	1281.8	1285.5	1287.8	1289.1	1287.8	1285.5	1281.8	1280.0	1281.8	1285.5
50.5°	1241.7	1244.0	1247.6	1249.9	1250.8	1249.9	1247.6	1244.0	1241.7	1244.0	1247.6
51°	1206.6	1208.0	1211.6	1213.5	1214.4	1213.5	1211.6	1208.0	1206.6	1208.0	1211.6
51.5°	1172.9	1173.8	1177.9	1181.1	1182.5	1181.1	1177.9	1173.8	1172.9	1173.8	1177.9
52°	1139.6	1141.4	1145.5	1149.6	1151.5	1149.6	1145.5	1141.4	1139.6	1141.4	1145.5
52.5°	1109.5	1111.3	1115.9	1120.0	1122.7	1120.0	1115.9	1111.3	1109.5	1111.3	1115.9
53°	1081.7	1083.5	1088.5	1092.7	1094.5	1092.7	1088.5	1083.5	1081.7	1083.5	1088.5
53.5°	1055.7	1057.6	1062.1	1065.8	1067.6	1065.8	1062.1	1057.6	1055.7	1057.6	1062.1
54°	1031.1	1032.5	1036.6	1038.9	1039.8	1038.9	1036.6	1032.5	1031.1	1032.5	1036.6
54.5°	1005.1	1006.5	1009.7	1012.4	1012.9	1012.4	1009.7	1006.5	1005.1	1006.5	1009.7
55°	976.4	977.8	981.0	982.8	981.9	982.8	981.0	977.8	976.4	977.8	981.0
55.5°	943.1	944.5	948.2	950.0	949.5	950.0	948.2	944.5	943.1	944.5	948.2
56°	906.2	908.0	912.6	914.9	914.4	914.9	912.6	908.0	906.2	908.0	912.6
56.5°	867.0	869.7	873.8	877.5	877.0	877.5	873.8	869.7	867.0	869.7	873.8
57°	826.0	828.3	834.2	836.5	836.9	836.5	834.2	828.3	826.0	828.3	834.2
57.5°	783.1	785.9	792.3	795.0	795.4	795.0	792.3	785.9	783.1	785.9	792.3
58°	739.8	742.6	748.9	753.1	754.0	753.1	748.9	742.6	739.8	742.6	748.9
58.5°	695.6	697.9	704.7	709.7	711.1	709.7	704.7	697.9	695.6	697.9	704.7
59°	650.9	653.2	659.6	666.4	668.3	666.4	659.6	653.2	650.9	653.2	659.6
59.5°	605.4	608.1	615.4	623.1	625.0	623.1	615.4	608.1	605.4	608.1	615.4
60°	559.8	563.9	571.2	580.7	581.7	580.7	571.2	563.9	559.8	563.9	571.2
60.5°	515.1	518.7	528.8	537.4	539.3	537.4	528.8	518.7	515.1	518.7	528.8
61°	471.3	475.9	486.8	495.0	497.3	495.0	486.8	475.9	471.3	475.9	486.8
61.5°	429.4	433.5	445.4	452.7	456.8	452.7	445.4	433.5	429.4	433.5	445.4
62°	387.9	392.0	404.3	411.6	416.2	411.6	404.3	392.0	387.9	392.0	404.3
62.5°	346.4	351.9	364.7	372.0	377.0	372.0	364.7	351.9	346.4	351.9	364.7
63°	305.9	312.7	325.9	333.7	339.6	333.7	325.9	312.7	305.9	312.7	325.9
63.5°	268.5	274.4	288.5	296.8	302.7	296.8	288.5	274.4	268.5	274.4	288.5
64°	232.9	239.3	252.1	261.7	267.1	261.7	252.1	239.3	232.9	239.3	252.1
64.5°	199.2	205.1	217.4	228.4	233.8	228.4	217.4	205.1	199.2	205.1	217.4
65°	166.8	175.0	185.5	196.0	201.0	196.0	185.5	175.0	166.8	175.0	185.5
65.5°	138.6	146.3	155.4	165.9	170.5	165.9	155.4	146.3	138.6	146.3	155.4
66°	111.7	119.4	128.5	138.6	140.9	138.6	128.5	119.4	111.7	119.4	128.5



TEST NUMBER: P776750

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	44.7	57.0	61.5	70.2	70.7	70.2	61.5	57.0	44.7	57.0	61.5
68°	27.4	40.1	44.7	53.3	52.4	53.3	44.7	40.1	27.4	40.1	44.7
68.5°	11.9	26.0	31.5	37.8	41.9	37.8	31.5	26.0	11.9	26.0	31.5
69°	6.4	16.0	20.5	24.6	32.4	24.6	20.5	16.0	6.4	16.0	20.5
69.5°	4.1	7.7	11.4	14.6	22.3	14.6	11.4	7.7	4.1	7.7	11.4
70°	2.3	4.6	5.5	6.4	12.3	6.4	5.5	4.6	2.3	4.6	5.5
70.5°	0.9	2.3	3.2	2.7	3.6	2.7	3.2	2.3	0.9	2.3	3.2
71°	0.9	1.4	1.8	1.4	1.4	1.4	1.8	1.4	0.9	1.4	1.8
71.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
73°	0.5	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.9	0.9
73.5°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.9
74°	0.5	0.5	0.5	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
80.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
81°	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776750

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776750

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2279.7	2279.7	2279.7	2279.7	2279.7	2279.7
0.5°	2280.1	2279.7	2280.1	2279.7	2279.2	2279.2
1°	2280.1	2279.2	2280.1	2279.7	2279.2	2279.2
1.5°	2279.7	2279.2	2279.7	2279.2	2278.8	2278.8
2°	2279.2	2278.8	2279.2	2279.2	2278.3	2278.3
2.5°	2279.2	2278.3	2279.2	2278.8	2278.3	2277.8
3°	2278.3	2277.8	2278.3	2278.3	2277.4	2277.4
3.5°	2277.8	2277.4	2277.8	2277.4	2276.9	2276.5
4°	2277.4	2276.5	2277.4	2276.5	2276.0	2276.0
4.5°	2276.5	2276.0	2276.5	2276.0	2275.6	2275.1
5°	2275.6	2275.1	2275.6	2275.1	2274.6	2274.2
5.5°	2274.6	2274.2	2274.6	2274.2	2273.3	2273.3
6°	2273.7	2273.3	2273.7	2272.8	2272.4	2271.9
6.5°	2272.8	2271.9	2272.8	2271.9	2271.5	2271.0
7°	2271.5	2271.0	2271.5	2271.0	2270.1	2269.6
7.5°	2270.1	2269.6	2270.1	2269.6	2268.7	2268.3
8°	2269.2	2268.7	2269.2	2268.3	2267.4	2267.4
8.5°	2267.4	2267.4	2267.4	2266.9	2266.0	2266.0
9°	2266.4	2266.0	2266.4	2265.5	2264.6	2264.2
9.5°	2265.1	2264.6	2265.1	2264.2	2263.3	2262.8
10°	2263.7	2263.3	2263.7	2262.8	2261.9	2261.4
10.5°	2262.3	2261.9	2262.3	2261.0	2260.5	2260.1
11°	2261.0	2260.5	2261.0	2259.6	2258.7	2258.7
11.5°	2259.6	2259.2	2259.6	2258.2	2257.3	2257.3
12°	2258.2	2258.2	2258.2	2256.9	2256.0	2256.0
12.5°	2256.9	2256.9	2256.9	2256.0	2254.6	2254.6
13°	2255.5	2256.0	2255.5	2254.6	2253.7	2253.2
13.5°	2254.6	2254.6	2254.6	2253.7	2252.3	2251.9
14°	2253.7	2253.7	2253.7	2252.3	2251.4	2250.9
14.5°	2252.8	2253.2	2252.8	2251.4	2250.5	2250.0
15°	2252.3	2252.3	2252.3	2250.5	2249.6	2249.1
15.5°	2251.4	2251.9	2251.4	2250.0	2248.7	2248.2
16°	2250.9	2251.4	2250.9	2249.1	2248.2	2247.8
16.5°	2250.5	2250.9	2250.5	2248.7	2247.8	2247.3
17°	2250.5	2250.9	2250.5	2248.7	2247.3	2246.8
17.5°	2250.5	2250.9	2250.5	2248.2	2247.3	2246.8
18°	2250.5	2250.9	2250.5	2248.2	2246.8	2246.4
18.5°	2250.5	2250.9	2250.5	2248.2	2246.8	2246.4
19°	2250.9	2251.4	2250.9	2248.2	2246.8	2246.8
19.5°	2250.9	2251.9	2250.9	2248.7	2247.3	2246.8
20°	2251.4	2251.9	2251.4	2248.7	2247.3	2246.8
20.5°	2251.4	2252.3	2251.4	2249.1	2247.3	2247.3
21°	2251.9	2252.3	2251.9	2249.1	2247.8	2247.3



TEST NUMBER: P776750

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2251.9	2252.8	2251.9	2249.1	2247.3	2246.8
23°	2251.4	2252.3	2251.4	2248.7	2246.8	2246.4
23.5°	2250.9	2251.9	2250.9	2248.2	2246.4	2245.9
24°	2250.5	2251.4	2250.5	2247.3	2245.5	2245.5
24.5°	2249.6	2250.5	2249.6	2246.4	2244.6	2244.1
25°	2248.7	2249.1	2248.7	2245.5	2243.2	2242.7
25.5°	2247.3	2247.8	2247.3	2244.1	2241.8	2241.4
26°	2245.5	2246.4	2245.5	2242.3	2240.0	2239.6
26.5°	2243.7	2244.1	2243.7	2240.5	2237.7	2237.3
27°	2240.9	2241.4	2240.9	2237.7	2235.4	2235.0
27.5°	2238.2	2238.6	2238.2	2235.0	2232.7	2231.8
28°	2235.0	2235.4	2235.0	2231.8	2229.1	2228.6
28.5°	2231.3	2231.3	2231.3	2228.2	2225.4	2225.0
29°	2226.8	2227.2	2226.8	2224.1	2221.3	2220.4
29.5°	2222.2	2222.2	2222.2	2219.5	2216.3	2215.4
30°	2216.8	2216.3	2216.8	2214.0	2210.8	2209.9
30.5°	2210.8	2210.4	2210.8	2208.1	2204.9	2204.0
31°	2204.0	2203.1	2204.0	2201.7	2198.1	2197.2
31.5°	2196.2	2195.3	2196.2	2194.4	2190.8	2189.4
32°	2188.0	2187.1	2188.0	2186.2	2182.6	2180.7
32.5°	2178.5	2177.6	2178.5	2177.1	2173.5	2171.6
33°	2168.4	2167.1	2168.4	2167.5	2163.4	2161.6
33.5°	2157.5	2156.1	2157.5	2156.6	2152.5	2150.2
34°	2145.6	2143.8	2145.6	2145.2	2141.1	2138.8
34.5°	2132.4	2130.6	2132.4	2132.4	2128.3	2125.6
35°	2118.8	2116.9	2118.8	2119.2	2114.6	2112.4
35.5°	2104.2	2102.3	2104.2	2104.6	2100.1	2097.8
36°	2088.7	2086.4	2088.7	2089.6	2085.0	2082.3
36.5°	2072.3	2069.5	2072.3	2073.2	2068.6	2066.3
37°	2054.9	2052.2	2054.9	2055.4	2051.3	2048.6
37.5°	2036.2	2033.5	2036.2	2037.6	2033.1	2030.8
38°	2017.1	2013.9	2017.1	2018.5	2014.4	2011.6
38.5°	1996.6	1993.9	1996.6	1998.4	1994.3	1991.6
39°	1976.1	1972.9	1976.1	1977.4	1973.8	1971.5
39.5°	1954.2	1951.0	1954.2	1955.6	1951.9	1950.1
40°	1931.4	1928.2	1931.4	1932.8	1929.1	1927.3
40.5°	1907.7	1904.5	1907.7	1909.1	1905.9	1904.5
41°	1883.5	1880.3	1883.5	1884.4	1881.7	1880.3
41.5°	1857.6	1855.3	1857.6	1859.4	1856.6	1855.7
42°	1832.0	1829.7	1832.0	1832.9	1831.1	1830.2
42.5°	1805.1	1802.9	1805.1	1806.0	1804.2	1804.2
43°	1777.3	1775.0	1777.3	1778.2	1776.9	1776.9
43.5°	1748.2	1746.8	1748.2	1749.1	1748.6	1748.6

TEST NUMBER: P776750

CATALOG NUMBER: HCDJBLS4050CSD-HCD81TRH-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1657.4	1657.0	1657.4	1657.9	1657.9	1659.3
45.5°	1625.1	1624.6	1625.1	1625.5	1626.0	1627.4
46°	1592.3	1591.8	1592.3	1592.3	1592.7	1594.5
46.5°	1557.6	1557.2	1557.6	1558.1	1558.5	1560.3
47°	1519.8	1518.9	1519.8	1520.7	1522.1	1523.9
47.5°	1481.0	1480.6	1481.0	1480.6	1482.4	1484.2
48°	1443.2	1443.7	1443.2	1442.7	1441.8	1442.3
48.5°	1404.4	1404.4	1404.4	1404.0	1402.2	1402.2
49°	1364.8	1365.2	1364.8	1364.3	1363.0	1363.4
49.5°	1326.5	1327.0	1326.5	1324.7	1321.9	1321.5
50°	1287.8	1289.1	1287.8	1285.5	1281.8	1280.0
50.5°	1249.9	1250.8	1249.9	1247.6	1244.0	1241.7
51°	1213.5	1214.4	1213.5	1211.6	1208.0	1206.6
51.5°	1181.1	1182.5	1181.1	1177.9	1173.8	1172.9
52°	1149.6	1151.5	1149.6	1145.5	1141.4	1139.6
52.5°	1120.0	1122.7	1120.0	1115.9	1111.3	1109.5
53°	1092.7	1094.5	1092.7	1088.5	1083.5	1081.7
53.5°	1065.8	1067.6	1065.8	1062.1	1057.6	1055.7
54°	1038.9	1039.8	1038.9	1036.6	1032.5	1031.1
54.5°	1012.4	1012.9	1012.4	1009.7	1006.5	1005.1
55°	982.8	981.9	982.8	981.0	977.8	976.4
55.5°	950.0	949.5	950.0	948.2	944.5	943.1
56°	914.9	914.4	914.9	912.6	908.0	906.2
56.5°	877.5	877.0	877.5	873.8	869.7	867.0
57°	836.5	836.9	836.5	834.2	828.3	826.0
57.5°	795.0	795.4	795.0	792.3	785.9	783.1
58°	753.1	754.0	753.1	748.9	742.6	739.8
58.5°	709.7	711.1	709.7	704.7	697.9	695.6
59°	666.4	668.3	666.4	659.6	653.2	650.9
59.5°	623.1	625.0	623.1	615.4	608.1	605.4
60°	580.7	581.7	580.7	571.2	563.9	559.8
60.5°	537.4	539.3	537.4	528.8	518.7	515.1
61°	495.0	497.3	495.0	486.8	475.9	471.3
61.5°	452.7	456.8	452.7	445.4	433.5	429.4
62°	411.6	416.2	411.6	404.3	392.0	387.9
62.5°	372.0	377.0	372.0	364.7	351.9	346.4
63°	333.7	339.6	333.7	325.9	312.7	305.9
63.5°	296.8	302.7	296.8	288.5	274.4	268.5
64°	261.7	267.1	261.7	252.1	239.3	232.9
64.5°	228.4	233.8	228.4	217.4	205.1	199.2
65°	196.0	201.0	196.0	185.5	175.0	166.8
65.5°	165.9	170.5	165.9	155.4	146.3	138.6
66°	138.6	140.9	138.6	128.5	119.4	111.7



TEST NUMBER: P776750

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	70.2	70.7	70.2	61.5	57.0	44.7
68°	53.3	52.4	53.3	44.7	40.1	27.4
68.5°	37.8	41.9	37.8	31.5	26.0	11.9
69°	24.6	32.4	24.6	20.5	16.0	6.4
69.5°	14.6	22.3	14.6	11.4	7.7	4.1
70°	6.4	12.3	6.4	5.5	4.6	2.3
70.5°	2.7	3.6	2.7	3.2	2.3	0.9
71°	1.4	1.4	1.4	1.8	1.4	0.9
71.5°	0.9	0.9	0.9	0.9	0.9	0.9
72°	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9
73°	0.9	0.9	0.9	0.9	0.9	0.5
73.5°	0.9	0.9	0.9	0.9	0.5	0.5
74°	0.9	0.9	0.9	0.5	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5	0.5
75.5°	0.5	0.5	0.5	0.5	0.5	0.5
76°	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.0	0.0
80.5°	0.5	0.5	0.5	0.5	0.0	0.0
81°	0.0	0.5	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776750
CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°

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Scaled Data Report





21.5°	2247.3	2247.8	2249.1	2251.9	2252.8	2251.9	2249.1	2247.8	2247.3	2247.8	2249.1
22°	2247.3	2247.3	2249.1	2251.9	2252.8	2251.9	2249.1	2247.3	2247.3	2247.3	2249.1



44°	1719.9	1719.0	1719.4	1718.5	1717.6	1718.5	1719.4	1719.0	1719.9	1719.0	1719.4
44.5°	1690.3	1688.9	1689.3	1688.9	1687.5	1688.9	1689.3	1688.9	1690.3	1688.9	1689.3



66.5°	89.3	96.6	103.0	112.6	115.3	112.6	103.0	96.6	89.3	96.6	103.0
67°	67.0	74.8	81.6	90.7	91.6	90.7	81.6	74.8	67.0	74.8	81.6



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	2251.9	2252.8	2251.9	2249.1	2247.8	2247.3
22°	2251.9	2252.8	2251.9	2249.1	2247.3	2247.3



44°	1718.5	1717.6	1718.5	1719.4	1719.0	1719.9
44.5°	1688.9	1687.5	1688.9	1689.3	1688.9	1690.3

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66.5°	112.6	115.3	112.6	103.0	96.6	89.3
67°	90.7	91.6	90.7	81.6	74.8	67.0

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89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



(END OF REPORT)